REMARKS

Claims 1-19 have been canceled. New claims 20-42 have been added. It should be appreciated that the new claims merely clarify the invention set forth in the specification, and do not add new matter.

Claims 1-19 were objected to under 37 C.F.R. §1.75 because each element of each claim is not separated by a line indentation. Claims 1-19 have been canceled. The Applicant respectfully submits that this rejection is now moot.

Claims 12-19 were rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1-19 have been canceled. The Applicant respectfully submits that this rejection is now moot.

Claims 7-19 were rejected under 35 U.S.C. §101 for reciting a process comprising an abstract idea. Claims 1-19 have been canceled. The Applicant respectfully submits that this rejection is now moot.

Claims 1-11 were rejected under 35 U.S.C. §102(a) as being anticipated by Ye et al. "Algorithmic Construction of Optimal Symmetric Latin Hypercube Design," Journal of Statistical Planning and Inference, Vol. 90 No. 1, pp 145-159 (July 2000). The Applicant respectfully traverses this rejection.

The Ye et al reference describes an algorithm for constructing an optimal symmetric Latin hypercube design. The methodology established a statistical model using data from a test and uses the statistical model to predict an experimental result. An optimal Latin hypercube design is utilized to predict the experimental result using a criteria, such as entropy. The purpose of the methodology is to construct the optimal LHD in a minimum amount of time. The

methodology restricts the search within a subset of the general LHD. The geometric properties of a symmetric LHD may make it more efficient to find the optimal LHD. The methodology described in the paper utilizes a columnwise-pairwise algorithm to construct the optimal LHD. In particular, two simultaneous pair exchanges are made in each column to retain the symmetry. The methodology includes the steps of starting with a random SLHD. The methodology also includes the steps of iteratively performing simultaneous pair exchanges and determining the best two simultaneous exchanges within column I, and updating the design matrix accordingly. The methodology further determines if the resulting design is better with respect to the criterion, and if the resulting design is better, the previous exchange step is repeated. If the resulting design is not better, the design is considered to be the optimal design and the search ends. The Yi reference merely describes how to select a portion of a design space for further analysis.

In contradistinction, new claim 20 discloses a method of interactively analyzing and optimizing a computer generated model of a design of a vehicle. The method includes the steps of preparing an analytical reliability and robustness parameter diagram using a computer system, wherein said reliability and robustness parameter diagram identifies a parameter within the computer generated model of the vehicle design to be analyzed and a set of design points of corresponding characteristics. The methodology selects a portion of a design space from the computer generated model of the vehicle design to approximate an associated performance surface and randomly selects sample points within the selected portion of the design space. The methodology performs a computer-based engineering simulation using the randomly selected sample points as an input value, to determine a corresponding output value, and determines a residual output value using the randomly selected sample points, wherein the residual output value is determined by approximating a performance surface response for the randomly selected

sample points. The methodology optimizes the approximated performance surface response within a predetermined degree of accuracy and determines a performance of the design using the optimized response that approximates the performance surface. The methodology further evaluates the performance of the design by the user to determine if the design meets a predetermined criteria and adopts the design as a final design if the performance meets the predetermined criteria. Otherwise, the methodology continues to optimize the overall design to be robust using a relationship between a value of the performance and a probability of occurrence, until the design meets the predetermined criteria. The methodology still further uses the final design in the design of the vehicle.

Claim 34 is similar to claim 20, and includes further limitations. Claim 42 discloses a system for implementing the methodology, using a computer system having a processor with a memory, an input means operatively in communication with the processor and a display means operatively in communication with the processor. A computer aided design model of the vehicle is stored in a database and operatively communicated to the processor. A computer aided engineering analysis software program is also operatively in communication with the processor. An analytical reliability and robustness parameter diagram is stored in the memory of the computer system, wherein the reliability and robustness parameter diagram identifies a parameter within the computer aided design model of the vehicle and a set of design points of corresponding characteristics. A vehicle model analysis and optimization software program is also stored in the memory of the computer system.

The cited reference does not disclose or anticipate applicant's invention. The Latin hypercube methodology described in this reference is merely a method of selecting a portion of the design for use in analyzing the overall design. The Latin hypercube methodology of the

reference is not a method of analyzing and optimizing a computer generated design of a vehicle to be robust, as proposed by the applicant. The cited reference does not include the steps of randomly selecting sample points within the design space and using these random sample points to create a corresponding output value. It also does not include the steps of determining a residual value to approximate the performance surface response for the random sample points. It does not include the steps of optimizing the performance surface response, or determining a performance of the design using the optimized response. It does not include the steps of optimizing the design to be robust if the design does not meet a predetermined criteria or using the final design in the design of a vehicle. These are two distinctly different methodologies, with different results.

It should be appreciated that one of the authors of this paper, Mr. Sudjianto, is also one of the named inventors of this application.

Therefore the Applicant respectfully submits that new claims 20-42 are allowable over the rejection under 35 U.S.C. §102(a), which allowance is respectfully solicited.

The office action also has an attached requirement for information under 37 C.F.R. 1.105. The applicant is concurrently submitting a supplemental IDS listing additional art which includes one of the inventors, Mr. Sudjianto as a co-author. The Applicant is not aware of other publications which any of the Applicant's may have authored. It should be noted that several of the Applicant's, including Mr. Sudjianto are no longer employed by the assignee.

Based on the above, the Applicant submits that the claims are in a condition for allowance, which allowance is respectfully solicited. If the Examiner finds to the contrary, it is respectfully requested that the undersigned in charge of this application be called at the telephone number given below to resolve any remaining issues.

Respectfully submitted,

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DATE OF DEPOSIT February 16, 2005

I hereby certify that this paper or fee (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service "Express Mail Post Office To Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Janice R. Kuehn